



State of Utah

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November 5, 2002

Ken May, General Manager
Canyon Fuel Company, LLC
397 South 800 West
Salina, Utah 84654

Re: Link Canyon Portal, Canyon Fuel Company, LLC, SUFCO Mine, C041/002-AM02E-1, Outgoing File

Dear Mr. May:

The above-referenced amendment has been reviewed. There are deficiencies that must be adequately addressed prior to approval. A copy of our Technical Analysis (TA) is enclosed for your information. The Technical Analysis also includes comments by the U.S. Forest Service, Manti-La Sal National Forest. You should note the construction restrictions in the Fish and Wildlife Information section of the TA. The current plan indicates that surface activities will be curtailed from December 1 through April 15 for big game and from January 1 to August 15 for raptors. This leaves September 1 to December 1 for construction activities. In order for us to continue to process your application, please respond to these deficiencies as quickly as possible.

If you have any questions, please call me at (801) 538-5325 or Dave Darby at (801) 538-5341.

Sincerely,

Daron Haddock
Permit Supervisor

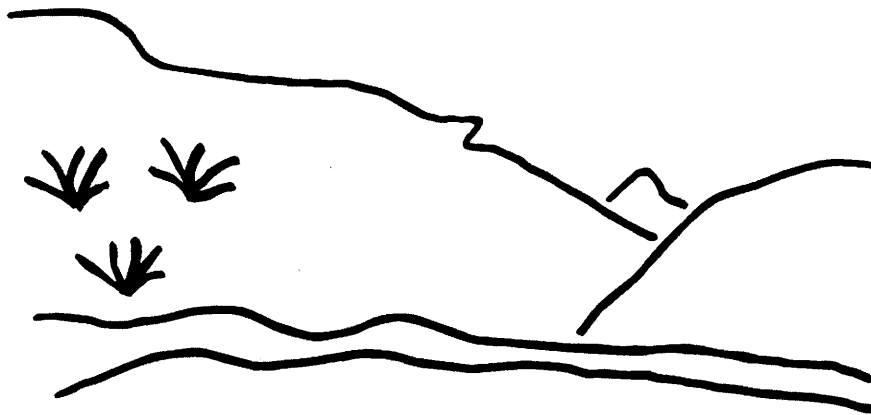
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Enclosure

cc: Price Field Office

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State of Utah



Utah Oil Gas and Mining

Coal Regulatory Program

SUFCO Mine
Link Canyon Portal
C/041/002-AM02E-1
Technical Analysis
Oct 31, 2002

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TECHNICAL ANALYSIS

TECHNICAL ANALYSIS

The Division ensures compliance with the Surface Mining Control and Reclamation Act of 1977 (SMCRA). When mines submit a Permit Application Package or an amendment to their Mining and Reclamation Plan, the Division reviews the proposal for conformance to the R645-Coal Mining Rules. This Technical Analysis is such a review. Regardless of these analyses, the permittee must comply with the minimum regulatory requirements as established by SMCRA.

Readers of this document must be aware that the regulatory requirements are included by reference. A complete and current copy of these regulations and a copy of the Technical Analysis and Findings Review Guide can be found at <http://ogm.utah.gov/coal>

This Technical Analysis (TA) is written as part of the permit review process. It documents the Findings that the Division has made to date regarding the application for a permit and is the basis for permitting decisions with regard to the application. The TA is broken down into logical section headings which comprise the necessary components of an application. Each section is analyzed and specific findings are then provided which indicate whether or not the application is in compliance with the requirements.

Often the first technical review of an application finds that the application contains some deficiencies. The deficiencies are discussed in the body of the TA and are identified by a regulatory reference which describes the minimum requirements. In this Technical Analysis we have summarized the deficiencies at the beginning of the document to aid in responding to them. Once all of the deficiencies have been adequately addressed, the TA will be considered final for the permitting action.

It may be that not every topic or regulatory requirement is discussed in this version of the TA. Generally only those sections are analyzed that pertain to a particular permitting action. TA's may have been completed previously and the revised information has not altered the original findings. Those sections that are not discussed in this document are generally considered to be in compliance.

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TECHNICAL ANALYSIS

INTRODUCTION

INTRODUCTION

This analysis summarizes the second technical evaluation for the Link Canyon portal amendment, received August 12, 2002. The Division completed the first Technical Analysis on July 18, 2002.

The Division received the original amendment on April 8, 2002 to re-open an old portal in the abandoned Link Canyon mine. This portal would allow access to the existing SUFCO mine through the old Link Canyon mine workings. The portal is needed to provide intake ventilation, an emergency escapeway, and for access to the electrical power substation located just opposite the road from the proposed portal. The Link Canyon Mine was closed in 1960 and is therefore a pre-SMCRA site. It is planned that the Link Canyon Portal will be used over the next 8 to 10 years. The proposed new disturbed area is 0.23 acre in size, with an estimated 0.14 acre actually to be disturbed. The entire area is contained within the present approved Permit Area. The new disturbance will include a 120-foot road and a power line to the Link Canyon substation.

The U.S. Forest Service is the Federal Surface Management Agency, since the proposed disturbance is within the Manti-La-Sal National Forest. The Forest Service has expressed their recent concerns about the project. On October 16, 2002 the Division received an e-mail from the Forest Service, Manti-La Sal National Forest, identifying these concerns. An official letter will follow. The e-mail was forwarded to Mike Davis on October 16, 2002, environmental coordinator at Sufco Mine. The deficiencies outlined by the Forest Service have been incorporated into this review.

The Utah Division of Water Quality has determined that, since the natural water flowing from the portal is not process wastewater, and since it has been flowing naturally for a number of years, no UPDES discharge point will be required even if the water is kept flowing.

The U.S. Fish and Wildlife has reviewed the project and has no comments on it.

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INTRODUCTION

SUMMARY OF DEFICIENCIES

SUMMARY OF DEFICIENCIES

The Technical Analysis of the proposed permit changes cannot be completed at this time. Additional information is requested of the permittee to address deficiencies in the proposal. A summary of deficiencies is provided below. Additional comments and concerns may also be found within the analysis and findings made in this Draft Technical Analysis. Upon finalization of this review, any deficiencies will be evaluated for compliance with the regulatory requirements. Such deficiencies may be conditioned to the requirements of the permit issued by the Division, result in denial of the proposed permit changes, or may result in other executive or enforcement action as deemed necessary by the Division at that time to achieve compliance with the Utah Coal Regulatory Program.

Accordingly, the permittee must address those deficiencies as found within this Draft Technical Analysis and provide the following, prior to approval, in accordance with the requirements

Regulations

- R645-301-142**, The application must include a map that distinguishes between disturbances, which occurred prior to August 3, 1977 and are therefore pre-SMCRA disturbance sites. 9
- R645-301-234.220**, The Permittee should evaluate an alternate location for storage of the topsoil pile, out of the drainage on a level slope 23
- R645-301-521.151**, The Permittee must show all contour lines that are up to 100 feet outside the disturbed area boundary on Plate 5-2F, Link Canyon Portal Surface Facilities..... 17
- R645-301-521.190 and R645-301-121.200**, The Permittee must label the premining, operational and postmining surface on the cross-sections on Plate 5-2F. 17
- R645-301-728**, The applicant shall upgrade the PHC to include Link Canyon mining activities. 27
- R645-301-730**, The applicant shall submit baseline water quality and quantity sample data for intermittent and perennial stream flow associated with the proposed portal and Link Canyon stream channel. The applicant shall establish a water monitoring site at the portal and collect water quality and quantity data. The site shall be included in the mines water monitoring plan and information submitted to the database. The applicant will be required to characterize the reaches of the Link Canyon stream channel using baseline water monitoring data. 27
- R645-301-732.300**, Provide illustrations and dimensions on Plate 5-2F and in cross-section of the intake and discharge structure for the Link Canyon main culvert(s). 27
- R645-301-742.300**, 1) The applicant will be required to design the main Link Canyon culverts to

SUMMARY OF DEFICIENCIES

transmit the flow of a 25 yr-24 hr precipitation event, 2) Submit a clean copy of the channel protection design identified in Appendix 7-13. 3) Provide detail drawing(s) of the culvert and bypass culvert catch basin at scale: 1 inch = 10 feet.....	28
R645-301-761 , The applicant shall submit a reclamation water monitoring plan which evaluates water quantity and quantity in the channel and portals.....	34

GENERAL CONTENTS

GENERAL CONTENTS

IDENTIFICATION OF INTERESTS

Regulatory Reference: 30 CFR 773.22; 30 CFR 778.13; R645-301-112

Analysis:

This information is in the current Mining and Reclamation Plan.

Findings:

The information provided in the application meets the minimum Identification of Interests requirement of the regulations.

VIOLATION INFORMATION

Regulatory Reference: 30 CFR 773.15(b); 30 CFR 773.23; 30 CFR 778.14; R645-300-132; R645-301-113

Analysis:

Update is not required by this submittal.

Findings:

The information provided in the application meets the minimum Violation Information requirement of the regulations.

RIGHT OF ENTRY

Regulatory Reference: 30 CFR 778.15; R645-301-114

Analysis:

Canyon Fuel Company has submitted an amendment to construct a new portal at Link Canyon. Link Canyon is located in Sevier County Section 26, W1/2NW1/4sw1/4.

The Bureau Land Management (BLM) is the mineral leaser and the U.S. Forest Service (USFS) is the landowner and manager of the Link Canyon Portal Area.

GENERAL CONTENTS

The Link Canyon portals area is within the DOGM permit area of the Sufco mine. The Link Canyon portal area was a part of the Pines Tract significant revision. The Division approved this revision in June 2000. Prior to Division approval, the BLM and USFS followed the NEPA process in and conducted an EIS (Environmental Impact Statement) of this area. The results of the EIS concluded that the BLM could issue a Coal Lease Permit. The permit was issued to Canyon Fuel Company, Sufco Mine on September 1, 1999 under lease number UTU-76195.

The U.S. Forest Service provided a Record of Decision (ROD) on October 15, 2002 that documents the USFS's decision to consent to reopening the west portal of the Link Canyon Mine by Canyon Fuel Company, LLC on the Manti-La Sal National Forest. The consent decision is conditioned upon requirement needed to mitigate effects to non-coal interests completed an environmental analysis (not an Environmental Assessment) of the Link Canyon Portal Area amendment and have a provided a list of deficiencies that will be incorporated into this technical review. A copy of the Forest Service comments was e-mailed to Mike Davis on October 16, 2002.

Findings:

The information provided in the application meets the minimum Right of Entry requirement of the regulations.

PUBLIC NOTICE AND COMMENT

Regulatory References: 30 CFR 778.21; 30 CFR 773.13; R645-300-120; R645-301-117.200.

Analysis:

The construction connects to a public road and therefore is within 100 feet of a public road. The Operator has submitted copies of public announcements made in the Emery County Progress, a local newspaper in Castle Dale, UT. The advertisement ran on April 23 and 30, and May 7 and 14, 2002.

Findings:

Information provided in the application meets the minimum requirements of the regulations

REPORTING OF TECHNICAL DATA

Regulatory Reference: 30 CFR 777.13; R645-301-130.

GENERAL CONTENTS

Analysis:

An Order I Soil Survey was conducted of the proposed Link Canyon pad and portal area in December 2001 by Dan Larsen, Soil Scientist, Environmental Industrial Services, Inc., Helper, Utah. Mr. Larsen's credentials along with those of Mr. Keith Zobell and Dr. Patrick Collins are found in Appendix 2-9.

InterMountain Laboratories, Inc. of Sheridan, Wyoming analyzed the soil samples.

Findings:

Information provided in the application meets the minimum Technical Data Reporting requirements of the Regulations.

MAPS AND PLANS

Regulatory Reference: 30 CFR 777.14; R645-301-140.

Analysis:

The application makes reference to previously disturbed areas in Section 2.3.1, page 2-11 and in Section 3.2.2.2, page 3-22. The Permittee indicates that these areas are shown on Plate 5-2F. The workings are shown on Plate 5-2F, but the previously disturbed area is not outlined on this plate.

Plate 5-2F identifies the existence of structures, but does not provide detailed design information. Detailed drawings are requested to show design of silt fences, percent slope of pad, drawing that shows the original and reclaimed topography of the portal access road and portal pad at a scale of 1 inch = 30 feet and detailed drawings of the culvert and bypass culvert at a scale of 1 inch = 10 feet.

Findings:

The information provided does not meet the minimum Maps and Plans requirement of the Regulations. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-142, The application must include a map that distinguishes between disturbances, which occurred prior to August 3, 1977 and are therefore pre-SMCRA disturbance sites.

Detailed drawings are requested to show design of silt fences, percent slope of pad, drawing that shows the original and reclaimed topography of the portal access road and portal

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GENERAL CONTENTS

pad at a scale of 1 inch = 30 feet and detailed drawings of the culvert and bypass culvert at a scale of 1 inch = 10 feet.

ENVIRONMENTAL RESOURCE INFORMATION

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

GENERAL

Regulatory Reference: 30 CFR 783.12; R645-301-411, -301-521, -301-721.

Analysis:

The Permittee submitted a map showing the previously mined area on Plate 5-2F.

Findings:

The information provided in the application meets the minimum General requirement of the regulations.

PERMIT AREA

Regulatory Requirements: 30 CFR 783.12; R645-301-521.

Analysis:

The permit area will not change. The Link Canyon Portals are already within the permit area.

Findings

The information provided in the application meets the Permit Area requirement of the regulations.

HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.12; R645-301-411.

Analysis:

John Senulis of Senco-Phenix conducted a literature and file review of the Link Canyon Mine portals. He concluded that no cultural or paleontological resources are present. The review did consider the historical significance of the Link Canyon Mine. This review is sufficient for the portal development work.

Findings:

The information provided meets the minimum Historic and Archeological Resource Information requirements of the regulations.

CLIMATOLOGICAL RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.18; R645-301-724.

Analysis:

The Convulsion Canyon Mine site receives an average annual precipitation of approximately 12.51 inches. Precipitation in the form of rain peaks in August with 1.65 inches being received on the average for that month. Snow covers the ground from September through May. Appendix 7-5 provides detailed climatological information.

Findings:

The information reported meets the minimum Climatological requirements of the Regulations.

VEGETATION RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.19; R645-301-320.

Analysis:

The vegetation of the Link Canyon Portal consists of approximately one-third riparian (non-jurisdictional wetland) and two-thirds pinyon-juniper communities. The vegetation within the riparian area consists of coyote willow, dogwood, water birch, stinging nettle, rose, horsetail, wiregrass, and Sandberg's bluegrass (Appendix 2-9, Vegetation of the Link Canyon Portal Surface Facilities Area). Species dominant in the pinyon-juniper are pinyon pine, Utah juniper and Salina wildrye. A vegetation map is provided in the vegetation report (Appendix 2-9, Vegetation of the Link Canyon Portal Surface Facilities Area).

Keith Zobell conducted a threatened and endangered plant survey of the area in 1996 and no threatened or endangered plant species were found (Appendix 2-2). No threatened, endangered or Forest listed sensitive we found when surveyed by Patrick Collins on July 23, 2002.

ENVIRONMENTAL RESOURCE INFORMATION

Findings:

The information provided meets the minimum Vegetation Resource Information requirements of the regulations.

FISH AND WILDLIFE RESOURCE INFORMATION

Regulatory Reference: 30 CFR 784.21; R645-301-322.

Analysis:

The Quitchupah Creek Road DEIS (2001) states that the Quitchupah Drainage is not likely to contain Mexican spotted owls and surveys are not necessary (page 3-8A). Link Canyon is a tributary to Quitchupah Drainage. The first of a two-year Mexican spotted owl survey was conducted in 2002 for the Muddy Creek EIS Data Adequacy study and no Mexican spotted owls were found. The Link Canyon area is identified on the 1997 model as potential breeding habitat. The Mexican spotted owl recovery team is in the process of changing the survey requirements for breeding habitat to the 2000 model plus any canyons less than 1.2 miles wide and more than 1.2 miles long associated with the pixels (personal conversation with Laura Romin, USFWS on October 24, 2002). The model shows breeding habitat in the NW ¼ section below section 26 where the portal are located. The canyon does fit the width and length criteria for survey. Additionally, during the Divisions and DWR's initial scooping of this project, Dr. Frank Howe (DWR and a member of the Mexican spotted owl recovery team) asked for this area to be surveyed. The application states that planned construction activities will not be conducted during critical nesting and rearing times, February 1 to August 31. If construction activities occur outside of this time limit a survey will be required.

A survey was conducted in June 2002 at the portal for aquatic fauna, specifically Forest sensitive spotted frog and boreal toad and other mollusks and amphibians. A report, Survey Report Aquatic Fauna Link Canyon Portal Area, found no sensitive aquatic fauna. No amphibian or mollusks or their sign were observed (Appendix 2-9). Several species of macroinvertebrates were identified.

Golden eagle nests occur within a half mile radius of the Link Canyon portals. Raptor surveys are conducted each spring. The application states that planned construction activities will not be conducted during critical nesting and rearing times, February 1 to August 31.

Findings:

The information provided meets the minimum Fish and Wildlife Resource Information requirements of the regulations if construction occurs outside of critical nesting and rearing times, February 1 to August 31.

SOILS RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.21; 30 CFR 817.22; 30 CFR 817.200(c); 30 CFR 823; R645-301-220; R645-301-411.

Analysis:

The proposed disturbance will affect 0.14 acres, with 0.05 acres being riparian in nature. The proposed mine facility is between 7,660 to 7,690 feet elevation. The average annual precipitation recorded at the mine site has been 12.59 inches with the majority of the precipitation falling as snow. The soil resources within the Link Canyon mine portal area are discussed in Section 2.1.3 and Appendix 2-9 of the PAP. The soils include steep side slopes and riparian areas in the drainages supported by mine water discharge.

Mr. Daniel Larsen, Professional Soil Scientist with Environmental Industrial Services conducted an Order I soil survey of the disturbed area in December 2001. His report is located in Appendix 2-9. The survey contains five soil profile descriptions (Appendix A), laboratory analysis of nine soil samples (Appendix B), soil and landscape photographs (Appendix D), and soils maps (Appendix E).

Soil Identification and Description and Productivity

The soils of the site were identified to their subgroup as either Typic or Calcic Ustocrepts, ranging from coarse silty to loamy-skeletal and are calcareous to carbonatic. The soil taxonomic classification was modified by Mr. Larsen in a letter dated July 15, 2002. According to the letter, the soils at the site are classified as

Order: Inceptisols (young, little horizonation; little pedogenesis)
Suborder: Ustepts (inceptisols that have a ustic soil moisture regime).
Great Group: Haplustepts (other Ustepts)
Subgroup: Typic or Calcic
Family: coarse silty to loamy-skeletal, mixed, frigid
Phases: calcareous to carbonatic

The soils were mapped using the following designations:

WC	Waste Coal
DR	Disturbed
CU	Calcic Ustochrepts, now classified as Calcic Haplustepts
TUE	Typic Ustochrepts, eroded carbonic, now classified as Typic Haplustepts
TUL	Typic Ustochrepts, light surface, now classified as Typic Haplustepts
VS	very stony bouldery areas
RP	riparian sites

The field sheets in Appendix A and the soils maps of Appendix E, describe soils

ENVIRONMENTAL RESOURCE INFORMATION

supporting pinyon pine, juniper, rabbitbrush, ephedra, serviceberry, sagebrush and bunchgrass. (During a site visit on December 6, 2001, the Division noted extensive colonies of Mahonia repens, Creeping Mahonia).

Soil Characterization

The soil horizons were sampled and analyzed according to DOGM guidelines for topsoil and overburden. Soil texture, rock fragment content (percent by volume), and Munsell color were determined in the field. Available Water Holding Capacity was estimated based upon texture and verified by saturation percent. Percent surface boulders and stones were noted on the field sheets as between 20 and 85%.

The Soil Description Location map in Appendix 2-9 shows seven sample locations.

Soil samples were sent to InterMountain Laboratories, Inc. Sheridan, Wyoming, for analysis. Appendix B of Appendix 2-9 contains the laboratory data. Appendix C provides a comparison of the soil test results with the Division's soil suitability criteria.

Overall, soil laboratory test results show a good rating for soil chemistry and fair rating for soil water holding capacity after correction for coarse fragments except as noted below:

Site #2, along the access road, 12 -24" depth, Electrical Conductivity (EC) equal 18.1 and Sodium Adsorption Ration (SAR) equal 9.18 and 0.26ppm Selenium
Site #5, along the access road, 0 - 25" depth, EC equal 8.37 and carbonates equal 45%.

Although concretions of carbonate were noted at site #5, there was no calcic horizon formed. As would be expected in a zone of carbonate precipitation, soluble magnesium is more abundant than soluble calcium at this depth. Roots were noted to a depth of 25 inches. Division photos of the site taken on June 5, 2002 show a plant community that does not appear to be affected by the elevated EC or the carbonate content of the soil.

These soils are developing on weathered coal and presently have an "A" horizon that is between 4-6 inches in depth and a B or C horizon extending to 20 to 40 inches. The surface soils ("A" and "B" horizons represented by sample sites 1, 2 and 5 are very fertile with Nitrate Nitrogen between 8.54 and 50.8 ppm, Phosphorus ppm between 0.92 and 3.45, and Potassium between 62.3 and 224 ppm. (The weathered coal is likewise rich in nitrate nitrogen.) This provides an interesting baseline for fertilization during reclamation of the site.

Sample site #6 represents the TUL map unit. This location had shallow topsoil 0-6 inches deep overlying a shallow (to 13 inches) C horizon. The soil was described as very stony and bouldery with 60% of the surface being rock.

A small riparian area (0.05 acres) represented by site #7 has very stony sandy loam soils to a depth of six inches deep. The riparian soils will be salvaged.

In accordance with R645-301-232.200, since the A horizon is less than six inches deep, the topsoil recovered will be a mix of both the A and B horizon soils. Depths of salvage range from 6 to 18 inches over the site (see Available Soil Resources table in Section 232.100). Large stones, 36 inches or less, are considered part of the soil layer and are included in the topsoil volume estimates.

Findings:

The information provided in the application meets the minimum Environmental Soil Resource requirement of the Regulations.

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

Analysis:

Affected Area Boundary Maps

There will be no change to the affected area, since underground mining will be minimal and no second mining in this area will be done. Therefore, subsidence will likely not take place.

Coal Resource and Geologic Information Maps

No mining of support structures will take place. The operator will clean a mining pathway through already developed rooms within the Link Canyon Mine. The entries will be sealed along the sides. The geologic map will not have to be updated. All entries have been developed. Minor amounts of mining may take place to connect the SUFCO mine with the Link Canyon mine.

Existing Structures and Facilities Maps

The Link Canyon Portal area does not have any existing structures.

Existing Surface Configuration Maps

The Permittee has submitted existing contours of the Link Canyon Portal area. This information is on Plate 5-2F. The existing surface configuration map does not show the contours 100 feet outside the disturbed area boundary. Also the cross-sections are not clearly labeled pre-mining and post-mining topography.

Mine Workings Maps

The Permittee has given underground mine workings of the old Link Canyon Mine and the immediate area of the SUFCO Mine. This information is on Plate 5-2F.

Permit Area Boundary Maps

The permit area will not change with the addition of the Link Canyon Mine.

Contour Maps

The Permittee has given contours of the Link Canyon Portal area.

Findings:

The information provided in the application is not considered adequate to meet the minimum Maps, Plans and Cross-sections of Resource Information requirements of the regulations. Prior to approval, the Permittee must provide the following information in accordance with,

R645-301-521.151, The Permittee must show all contour lines that are up to 100 feet outside the disturbed area boundary on Plate 5-2F, Link Canyon Portal Surface Facilities.

R645-301-521.190 and R645-301-121.200, The Permittee must label the premining, operational and postmining surface on the cross-sections on Plate 5-2F.

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ENVIRONMENTAL RESOURCE INFORMATION

OPERATION PLAN

OPERATION PLAN

MINING OPERATIONS AND FACILITIES

Regulatory Reference: 30 CFR 784.2, 784.11; R645-301-231, -301-526, -301-528.

Analysis:

Facilities and Structures

There will be no building at the Link Canyon Portal. This area will be used for mine ventilation, emergency escape way, and to access the Link Canyon substation.

A culvert and power pole will be located in this area.

The Permittee is bringing a powerline from the Link Canyon substation to the Link Canyon Portal.

Findings:

The information provided in the application meets the Mining and Operations Facilities requirement of the regulations.

EXISTING STRUCTURES:

Regulatory Reference: 30 CFR 784.12; R645-301-526.

Analysis:

There are no existing structures at the Link Canyon Portal area. The Permittee will reopen one of the two caved portals.

Findings:

The information provided in the application meets the minimum Existing Structures requirement of the regulations.

RELOCATION OR USE OF PUBLIC ROADS

Regulatory Reference: 30 CFR 784.18; R645-301-521, -301-526.

Analysis:

The Permittee addresses measures to be employed, Page 5-10, to protect the public during construction and during operations. During construction the applicant will post warning signs and a temporary chain link fence will be installed to prevent access to the portal site. During operations the portal area will be gated and locked. Inspections will be conducted of the road and portal area by mine personnel to ensure erosion does not become a problem.

Findings:

The information provided in the application meets the minimum Relocation or Use of Public Roads requirement of the regulations.

AIR POLLUTION CONTROL PLAN

Regulatory Reference: 30 CFR 784.26, 817.95; R645-301-244, 301-420.

Analysis:

The operator will control fugitive dust by application of water to areas where needed (Section 4.2.2, page 4-17). The Convulsion Canyon Mine operates under Division of Air Quality approval order DAQE-714-98 dated October 28, 1998 found in Appendix 4-4.

Findings:

The information provided in the MRP is adequate for the Air Pollution Control Plan requirements of the Regulations.

SUBSIDENCE CONTROL PLAN

Regulatory Reference: 30 CFR 784.20, 817.121, 817.122; R645-301-521, -301-525, -301-724.

Analysis:

Subsidence Control Plan

There will be a small amount of mining to connect the Link Canyon Mine to the SUFCO mine. There will be no second mining in this area. Therefore, no subsidence should take place. The plan does not need to be changed.

OPERATION PLAN

Findings:

The information provided in the application meets the minimum Subsidence Control Plan requirement of the regulations.

FISH AND WILDLIFE INFORMATION

Regulatory Reference: 30 CFR 784.21, 817.97; R645-301-322, -301-333, -301-342, -301-358.

Analysis:

Bald and Golden Eagles

Golden eagles are sensitive to human disturbance during the nesting period. The Fish and Wildlife Service recommends a one-half mile buffer zone with no disturbance be maintained from January 1 to August 31. The nests will be monitored to see if they are being used. After the facilities are in place, very little mining activity will occur in the area with only emergency maintenance and monthly inspections.

Link Canyon also contains high priority deer and elk winter range. The current plan says surface activities will be curtailed from December 1 through April 15 (page 3-42) for big game and January 1 to August 15 for raptors. That leaves September 1 to December 1 for construction activities.

Electrical lines are wrapped and coated upon leaving the substation to the underground (personal communication with Mike Davis on October 28, 2002). No phase to phase or phase to ground contact of bare wires is possible making the lines raptor safe.

Findings:

The information provided meets the minimum Fish and Wildlife Information requirements of the regulations.

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR 817.22; R645-301-230.

Analysis:

Removal and Storage

Regulation 645-301-232.100 requires topsoil removal from all disturbed areas. The disturbed area boundary encompasses 0.23 acres. The boundary has been drawn wider than the expected area of disturbance. Topsoil will be removed along the portal access road and at the portal pad, approximately 0.14 acres of new disturbance, but not from beneath the proposed power distribution structures. Therefore, there will be 0.09 acres of undisturbed ground within the disturbed area. Should the area of disturbance expand to the disturbed area boundary and encompass the additional 0.09 acres, topsoil must be removed from those 0.09 acres prior to disturbance.

Soils will be removed from all disturbed areas with the exception of the power pole disturbance and from undisturbed islands within the disturbed area. The area of topsoil removal will be flagged, according to the cover letter attached with this submittal (dated August 6, 2002).

The Permittee will have a qualified person on site during construction and reclamation phases (Section 2.3.1.1, page 2-13). Soil types and estimations of salvage depth and area are related in a table in Section 2.3.1.1, page 2-13. In this table, the area of salvage sums to 0.1 acre and the recovery depth of six inches will be used on the riparian areas (RP), the Calcic Haplustepts (CU), and the Typic Haplustepts, light colored (TUL). Less soil recovery is expected in the Typic Haplustepts eroded, carbonatic (TUE) soils. The Permittee has noted on page 2-20 Section 2.3.2.3 of the MRP that all soil will be salvaged to a depth of six inches where the topsoil is less than six inches in depth.

Soil handling will be done at a moisture level of at least 15% (page 2-14, Section 2.3.1.1). A tracked vehicle will be used for topsoil removal (page 2-13, Section 2.3.1.1). A rubber tired vehicle may be used after the topsoil is salvaged.

The plan indicates in Section 2.3.1.1 page 2-11 that topsoil will be carefully separated from the subsoil since most of the subsoils are not suitable as substitute topsoil or growth media, due to high carbonates in the subsoils.

Approximately 80 yards of topsoil will be stockpiled. Page 2-13 Section 2.3.1.1 indicates that the actual volume of soil salvaged and dimensions of the stockpile will be shown on an as-built map.

Berms (and/or silt fences) and a three-strand barbed wire fence will be used to protect stored topsoil (Section 2.3.1.4, page 2-18). The stockpile will be vegetated (Section 2.3.4.2, page 2-23), with the forbs and grasses outlined in the seed mix described on page 3-47 (Section 3.4.1.2), revised with this submittal.

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The surface of the stockpile will be pitted to retain moisture and reduce erosion (Section 2.3.1.4, page 2-19). In addition the pile will be mulched with grubbed vegetation. This practice is described in the Practical Guide to Reclamation (DOGM, 2000), available at <http://dogm.nr.state.ut.us>.

An attempt to reestablish colonies of *Mahonia repens* (Creeping Oregon Grape) will be made by scooping the surface layer of soil from the TUE soils and temporarily storing the soils until topsoil pile construction is complete. The TUE soils and *Mahonia* roots will then be placed on top of the topsoil pile (Section 2.3.1.1, page 2-14). Care in transplanting these plants will help provide immediate protection and erosion control on the topsoil pile. The surface layer of soil carried with the transplanting operation is valuable for it contains seeds, microorganisms, organic matter, elevated levels of nitrogen and phosphorus.

The topsoil stockpile location is shown on Plate 5-2F. This location is in the existing drainage and may be subject to flooding should a culvert become plugged or some other unexpected event occur. The Division has recommended a change in location of the topsoil in the July 17, 2002 Technical Analysis. Presently, the Forest Service has also requested that the topsoil be relocated outside of the flood plain. Placement of the topsoil in the existing topsoil pile inside the substation fence appears to be difficult. This issue remains to be resolved.

Findings:

Information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Accordingly, the Permittee must address those deficiencies as found within this Draft Technical Memo and provide the following, prior to approval, in accordance with the requirements of:

R645-301-234.220, The Permittee should evaluate an alternate location for storage of the topsoil pile, out of the drainage on a level slope

VEGETATION

Regulatory Reference: R645-301-330, -301-331, -301-332.

Analysis:

A plan for interim revegetation is found in Section 3.5.3 of the MRP.

Findings:

The information provided meets the minimum Vegetation requirements of the regulations.

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR 784.24, 817.150, 817.151; R645-301-521, -301-527, -301-534, -301-732.

Analysis:

Road Classification System

The Permittee will construct a road from the Link Canyon Road to the Link Canyon Portal. This road has been classified as an ancillary road. There will be no frequent travel on this road. The road will be reclaimed during reclamation of this area.

Findings:

The information provided in the application meets the minimum Road Systems and Other Transportation Facilities requirement of the regulations.

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

Analysis:

General

The proposed new portal area is 0.23 acre in size, with an estimated 0.14 acre actually to be disturbed and needing reclamation. The entire area is contained within the present approved Permit Area. The access road to the pad and portal area branches off the Link Canyon Road for a maximum distance of about 200 feet. Link Canyon Road is a public road. The road and portal would be constructed by simple cut and fill methods. There is a small riparian area, about 40 feet by 50 feet or 0.05 acre, at the old portal. The source of this water is unknown, but believed due to two possible sources. The first is water that has accumulated within, and filled up, the old Link Canyon Mine. This is believed most likely. The second possible source is a spring located above the portal, higher up in Link Canyon. Opening the portal is expected to reveal the water source. Water flows in this riparian area are estimated to be 5 gallons per minute or less, depending on the season of the year.

OPERATION PLAN

Surface-Water Monitoring

A small amount of water discharges from both of the Link Canyon Portals. The operator claims, telephone conversation with Mike Davis on October 18, 2002, that one portal has been monitored and flows about 1 gallon per minute and the other flows about the same amount. He Mr. Davis also stated that the field parameters were obtained from the water flowing from the portal recently. Since water flows from both portals, the operator believes that the mine is flooded. Water emanating from the portals sustain a riparian area below the mine. Mr. Davis stated that the flow quickly seeps into the ground below the portals and that subsurface flow sustains the riparian area. The operator has committed to maintain the flow to the riparian area, Page 7-31.

No water monitoring data has been submitted to establish the seasonal flows at the portals. The operator will be required to submit information to identify the seasonal variation in quality and quantity of water emanating at the portals.

Discharges into an Underground Mine

Water is believed to have filled up the old Link Canyon Mine. The Operator proposes to remove this water during rehabilitation of the entryway. Water removal would be by draining it into the SUFCO Mine and discharging that water at UPDES point number 003, which is an existing discharge at the main minesite. During the rehabilitation of the mine entryway, seals will be placed in the mine to contain and restore the reservoir that supplies the mine discharge. Some water may have to be pumped out the working portal during operations.

Underground water is expected to continue flowing to the area during and after this new construction. The Operator proposes to implement a water collection and pumped discharge system that will allow water in the abandoned (Link Canyon Mine) mine, only, to be discharged near the old portal site. Mine water will also discharge from the other old portal about 100 feet south of the portal to be reopened. It's worth noting that when the Pines Tract was evaluated for mining, the U.S. Forest Service developed an Environmental Impact Statement. That EIS anticipated a new company operating the mines in this area and development of a completely new disturbed area for a minesite in Link Canyon, at the site of the proposed portal opening. Further, that new minesite was assumed to completely destroyed the riparian area being discussed here. This would mean no water flows for the life of the new mine. This current proposal could also affect riparian area if flow is stopped for a long period of time. However, the water flow will be maintained during the operation of the mine and will be restored at reclamation. The total time during which the riparian area proper will be lost is about 8 to 10 years, as opposed to the life of mine anticipated by a new minesite in Link Canyon.

Diversions

Plate 5-2F shows two undisturbed drainage diversion ditches, Channel 1 and Channel 2, leading to a silt the main undisturbed drainage channel. These ditches have been designed with only consideration of the runoff of the road and pad areas, each about 0.04 acre respectively. The resulting flows of 0.02 cfs are minimal. During the previous review it was found that the undisturbed channels were not designed to include some of the undisturbed drainage originating outside the disturbed area, contributing water to these ditches. The ditches have been redesigned to accommodate these undisturbed drainage contribution. The ditches were designed using a 10-year, 6-hour design storm, which is appropriate for a temporary diversion on an intermittent stream. The diversion ditches have 0.3 foot of freeboard, which is adequate design.

The operator plans to install a culvert under the disturbed area to convey storm runoff under the area. The culvert is designed for the 10-year, 6-hour storm and the design used the 776-acre drainage area above the inlet to the culvert. During the first technical some concerns were expressed about the values used in calculating flow. Since the culvert is designed for the 10 yr.-24 hr. precipitation event and will likely be used for at least a 10 year period, the probability that the design standards will be equaled or exceeded is at least once in the ten year period. Although there is no threat to life or property, the Division wants a larger culvert to ensure a higher confidence factor in protecting the pad and ensuring the design condition is not exceeded, given the steep terrain and paucity of ground cover. The USFS has also (independently) determined that a culvert designed to transmit flows of a 25 yr.- 6 hr. precipitation event should be installed under the portal pad. They have identified this as a deficiency.

Stream Buffer Zones

The drainage area above the new portal is 776 acres, which is greater than one square mile. By regulatory definition the stream is "intermittent" above the portal. Stream buffer zone signs will be required. For intermittent stream channels, UDOGM water monitoring guidelines identify that baseline monitored should be conducted monthly during periods of flow, and monthly for perennial streams. The current description in the mine plan identifies the area below the portals as perennial for several hundred yards. The Water Monitoring Guidelines call for monthly monitoring of perennial streams to establish seasonal variation in quality and quantity. The operator needs to characterize the stream channels, the flow patterns and water quality in the vicinity of the proposed portal area.

Sediment Control Measures

The slope adjacent to the Link Canyon Portal access road will be disturbed and excavated to create the roadway. Plate 5-2F indicates that a cut approximately six feet deep and 15 feet high will be made on the slope. Page 7-62 of the application indicates that the cut and fill slopes will be revegetated with the forbs and grasses outlined in the seed mix described on page 3-47

OPERATION PLAN

(Section 3.4.1.2), revised with this submittal.

Several areas of the road and pad construction are below the road and pad. Silt fences at the lower end of the construction will protect these areas. The Plate 5-2F needs to show the location of all silt fences. Further, the plate needs to show the direction of drainage across the road and pad to the diversion ditches. The Alternate Sediment Control Areas (ASCA) areas also need to be shown on the plate. Calculations for the ASCA areas are provided and show the silt fences should be adequate to contain sediment from the areas.

No details are provided to show construction of the catch basin shown on Plate 5-2F. These will need to be shown, especially that this basin will prevent excess sediment from leaving the disturbed area. The Operator will need to commit to cleaning out this basin as needed to keep the basin operating as a sediment trap.

Discharge Structures

There is indication of riprap or other channel erosion protection at the outlet of the culvert, drawing in Appendix 7-2. However, the drawing is not ledgeable and should be resubmitted showing dimensions.

Findings:

The information provided in the application is not considered adequate to meet the minimum Hydrologic Information requirements of the regulations. Prior to approval, the permittee must provide the following information in accordance with,

R645-301-728, The applicant shall upgrade the PHC to include Link Canyon mining activities.

R645-301-730, The applicant shall submit baseline water quality and quantity sample data for intermittent and perennial stream flow associated with the proposed portal and Link Canyon stream channel. The applicant shall establish a water monitoring site at the portal and collect water quality and quantity data. The site shall be included in the mines water monitoring plan and information submitted to the database. The applicant will be required to characterize the reaches of the Link Canyon stream channel using baseline water monitoring data.

R645-301-732.300, Provide illustrations and dimensions on Plate 5-2F and in cross-section of the intake and discharge structure for the Link Canyon main culvert(s).

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R645-301-742.300, 1) The applicant will be required to design the main Link Canyon culverts to transmit the flow of a 25 yr-24 hr precipitation event, 2) Submit a clean copy of the channel protection design identified in Appendix 7-13. 3) Provide detail drawing(s) of the culvert and bypass culvert catch basin at scale: 1 inch = 10 feet.

SIGNS AND MARKERS

Regulatory Reference: 30 CFR 817.11; R645-301-521.

Analysis:

The plan indicates that the disturbed area is 0.23 acres, but that the alternate sediment control area and the actual area to be disturbed and reclaimed is only 0.14 acres (page 1-37). The requirement for placement of signs and markers is to delineate the perimeter of all affected areas. The plan describes placement of signs to delineate the affected area boundary in Section 5.2.1.2 page 5-16. Plate 5-2F indicates marker placement along the disturbed area boundary (0.23 acres).

Findings:

The information provided in the application meets the minimum Signs and Markers requirements of the Regulations.

MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS

Regulatory Reference: 30 CFR 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

Analysis:

Affected Area Maps

Affected area map will not be required because no second mining will take place.

Mining Facilities Maps

The mine facility is on Plate 5-2F. This map is P.E. certified. The permittee will need to show the utility corridor on Plate 5-2F as a requirement of R645-301-521.161.

OPERATION PLAN

Bonded Area Map

Plate 5-2F shows the disturbed area boundaries, which are considered the bonded area boundaries. The location of the disturbed area is not shown in relation with other known points such as township and range or UTM coordinates.

Mine Workings Maps

The permittee has submitted a mine-working map showing the SUFCO and the old Link Canyon Mines see Plate 5-2F. The permittee has shown the powerline corridor from the Link Canyon substation to the Link Canyon portals.

Findings:

The information provided in the application meets the minimum Maps, Plans and Cross-sections of Mining Operations requirements of the Regulations.

RECLAMATION PLAN

RECLAMATION PLAN

POSTMINING LAND USES

Regulatory Reference: 30 CFR 784.15, 784.200, 785.16, 817.133; R645-301-412, -301-413, -301-414, -302-270, -302-271, -302-272, -302-273, -302-274, -302-275.

Analysis:

No changes to the postmining land use are proposed, and the reclamation plan appears to be in compliance with the management plan of the Forest Service.

Findings:

Information provided in the amendment is considered adequate to meet the requirements of this section of the regulations.

APPROXIMATE ORIGINAL CONTOUR RESTORATION

Regulatory Reference: 30 CFR 784.15, 785.16, 817.102, 817.107, 817.133; R645-301-234, -301-412, -301-413, -301-512, -301-531, -301-533, -301-553, -301-536, -301-542, -301-731, -301-732, -301-733, -301-764.

Analysis:

The permittee will restore the Link Canyon Portal area to the approximate original contour. This is indicated on Plate 5-2F. The permittee has added the cost of removal of the power poles during reclamation.

Findings:

The information provided in the application meets the Approximate Original Contour Restoration requirement of the regulations.

BACKFILLING AND GRADING

Regulatory Reference: 30 CFR 785.15, 817.102, 817.107; R645-301-234, -301-537, -301-552, -301-553, -302-230, -302-231, -302-232, -302-233.

Analysis:

General

The Permittee has submitted backfilling and grading information for the reclamation of the Link Canyon Portal area. This information is on Plate 5-2F. The Permittee will cut 234.83 cubic yards and fill 278.20 cubic yards.

Findings:

The information provided in the application meets the minimum Backfilling and Grading requirement of the regulations.

MINE OPENINGS

Regulatory Reference: 30 CFR 817.13, 817.14, 817.15; R645-301-513, -301-529, -301-551, -301-631, -301-748, -301-765, -301-748.

Analysis:

The Permittee has given information on sealing the portal. The plan is to seal the mine opening at least 25 ft. inside the mine. The seal will be constructed of solid concrete blocks using mortar. Also, MSHA regulation requires a 4-inch hitch into solid ribs, floor, and roof. The Permittee has committed to 16-inch hitch into solid ribs, floor, and roof.

Findings:

The information provided in the application meets the minimum Mine Openings requirement of the regulations.

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR 817.22; R645-301-240.

Analysis:

Redistribution

Topsoil will be transported with wheel mounted equipment, but spread with track-mounted equipment (Section 2.4.2.1). Topsoil will be redistributed over the area to an approximate thickness of six inches (Section 2.4.2.1 page 2-25).

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The MRP indicates in Section 2.4.3 that stored topsoil will be tested for levels of nitrate nitrogen, phosphorus and potassium at the time of reclamation. Application rates should attempt to re-establish baseline conditions.

Findings:

The information provided in the application is adequate for the purposes of the Regulations.

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR 701.5, 784.24, 817.150, 817.151; R645-100-200, -301-513, -301-521, -301-527, -301-534, -301-537, -301-732.

Analysis:

Reclamation

The road will be reclaimed during reclamation.

Findings:

The information provided in the application meets the Road Systems and other Transportation Facilities requirement of the regulations.

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR 784.14, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-301-512, -301-513, -301-514, -301-515, -301-532, -301-533, -301-542, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-733, -301-742, -301-743, -301-750, -301-751, -301-760, -301-761.

Analysis:

Gravity Discharges

The applicant has identified plans for restoration of the water flows to the existing riparian area. The applicant plans to seal the area of water recharge into the mine. Some of the areas will be sealed during entry development, which will keep flows at the eastern portal. Water will be piped from the sealed area to keep flow in the western channel below the access portal. The applicant plans to seal the mine at reclamation to prevent drainage flowing down dip as water backs up in the mine it will flow from the portals. The applicant states that the mine may have to be filled with a good quality water from another part of the Sufco Mine to initiate the spill over effect, since recharge occurs at such a slow rate. By this method the riparian area will not be deprived of a water source. The applicant states that they will work with the Division

RECLAMATION PLAN

of Water Quality to ensure no conflicts with UPDES standards.

Findings:

The information provided in the application is not considered adequate to meet the minimum Reclamation Hydrology requirements of the regulations. Prior to approval, the permittee must provide the following information in accordance with,

R645-301-761, The applicant shall submit a reclamation water monitoring plan which evaluates water quantity and quantity in the channel and portals.

REVEGETATION

Regulatory Reference: 30 CFR 785.18, 817.111, 817.113, 817.114, 817.116; R645-301-244, -301-353, -301-354, -301-355, -301-356, -302-280, -302-281, -302-282, -302-283, -302-284.

Analysis:

General Requirements

The general pinyon-juniper seed mixture and plantings for the SUFCO mine and riparian area of the Link Canyon Mine portal are given in section 3.4.1.2. Oregon grape a dominant soil stabilizer in the area immediately surrounding the portal access road will be transplanted to the topsoil pile and then returned to the reclaimed area.

The riparian area will be planted with willow, red osier dogwood, woods rose and alder. Shrubs will be planted in late August through early October (page 3-46). The NRCS Plant Materials Centers at <http://plant-materials.nrcs.usda.gov/idpmc/> provide excellent instructions for restoring riparian or wetland areas. Plugs of sedges from the adjacent portal wet area could also be transplanted.

A pinyon-juniper and riparian reference area was established for the Link Canyon Portals and are shown on Vegetation Map, Link Canyon Portal Area in Appendix 2-9, Vegetation of the Link Canyon Portal Surface Facilities Area. At the time of bond release the vegetation of the disturbed area will be compare to the corresponding reference area.

Link Canyon is used to trail cattle to the top of the plateau, and it is anticipated they would graze on vegetation in the reclaimed area. This could reduce vegetation establishment and success, so the Permittee has committed to placing a fence around the reclaimed area.

Findings:

The information provided meets the minimum Revegetation requirements of the regulations.

RECLAMATION PLAN

STABILIZATION OF SURFACE AREAS

Regulatory Reference: 30 CFR 817.95; R645-301-244.

Analysis:

The final surface will be pitted (Section 2.4.2.1). All areas will be mulched (Section 2.4.4.1).

Placement of large rocks and boulders and slash is described on page 2-28.

In accordance with R645-301-244.300, rills and gullies that contribute to a violation of water quality or that disrupt the post-mining land use will be filled, regraded or stabilized (Section 2.4.4.3).

Findings:

The information in the meets the requirements of the Regulations with regard to stabilization of the soil surface and control of erosion and air pollution attendant to erosion.

BONDING AND INSURANCE REQUIREMENTS

Regulatory Reference: 30 CFR 800; R645-301-800, et seq.

Analysis:

The Division reviewed the bond calculations submitted for the Link Canyon portal and incorporated the information into the reclamation cost estimate. The Link Canyon project is small and only requires \$12,185 in direct cost for reclamation in 2002 dollars.

The total amount of the bond is for \$4,439,000 in 2001 dollars. The Division has made other recalculations of the reclamation costs and determined the amount to be \$2,864,000 in 2006 dollars. Because the current bond amount is in excess of the reclamation cost estimate, no additional bond is needed. See summary of reclamation costs for details.

Findings:

The Permittee has met the minimum regulatory requirements for the bonding and insurance requirements section of the regulations.